



**INTELLECTUAL PROPERTY LAW**  
ATLANTA • PHILADELPHIA • SEATTLE

**RECEIVED**  
**CENTRAL FAX CENTER**

**JAN 09 2006**

ATLANTA OFFICE  
2002 Summit Blvd., Suite 800  
Atlanta, GA 30319  
404-459-0050  
Fax: 404-459-5734

## FACSIMILE

**DATE:** January 9, 2006

**JOB CODE:** 35/822

*Please deliver this and the following pages to:*

**Name:** Examiner Kahsay Habte  
**Company/Firm:** USPTO - Group 1624  
**Telecopier No.:** 571-273-8300  
**Client/Matter No.:** JANS-0042 (U.S. Application No. 10/817,472)  
**Sender's Name:** Wendy A. Choi, Esq.  
**Pages to Follow:** 19

If transmission is not complete, please call our Atlanta Office at (440) 459-0050.

### COVER MESSAGE:

Examiner Habte -

As you requested, I reviewed the corresponding European counterpart to determine if there is a subgenus that we could suggest that would assist you in searching the subject matter of the claims of U.S. Application No. 10/817,472. In the European counterpart application, no unity of invention rejection was made and all of the subject matter (including all (a-1) to (a-5) and all (b-1) to (b-8)) was examined in a single application. Below I am reproducing the classes/subclasses that were searched. I hope that you find this additional information helpful in the searching and examination of the pending claims directed to compounds of formula I including (a-2) to (a-5) and (b-4) to (b-6). I am also enclosing the examination report and the response thereto filed in the European Patent Office. Each of the references cited in the examination report is of record in the subject application.

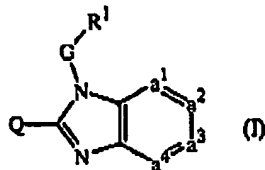
C07D401/12, A61K31/437, A61K31/4465, A61K31/4545, A61P11/00, A61P31/12, C07D471/04, C07D401/14, // (C07D471/04, 235:00), C07D221:00 [2002/16]

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. IF THE READER OF THIS MESSAGE IS NOT THE INTENDED RECIPIENT, OR THE EMPLOYEE OR AGENT RESPONSIBLE FOR DELIVERY OF THE MESSAGE TO THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISSEMINATION, DISTRIBUTION OR COPYING OF THIS COMMUNICATION IS STRICTLY PROHIBITED. IF YOU HAVE RECEIVED THIS COMMUNICATION IN ERROR, PLEASE NOTIFY US IMMEDIATELY BY TELEPHONE AND RETURN THE ORIGINAL TO US AT THE ABOVE ADDRESS VIA THE U.S. POSTAL SERVICE. THANK YOU.

-60-

Claims

1. A compound of formula

a *N*-oxide, addition salt, quaternary amine or stereochemically isomeric form thereof

5 wherein

 $-a^1=a^2-a^3=a^4-$  represents a bivalent radical of formula $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$  (a-1); $-\text{N}=\text{CH}-\text{CH}=\text{CH}-$  (a-2); $-\text{CH}=\text{N}-\text{CH}=\text{CH}-$  (a-3);10  $-\text{CH}=\text{CH}-\text{N}=\text{CH}-$  (a-4); or $-\text{CH}=\text{CH}-\text{CH}=\text{N}-$  (a-5);

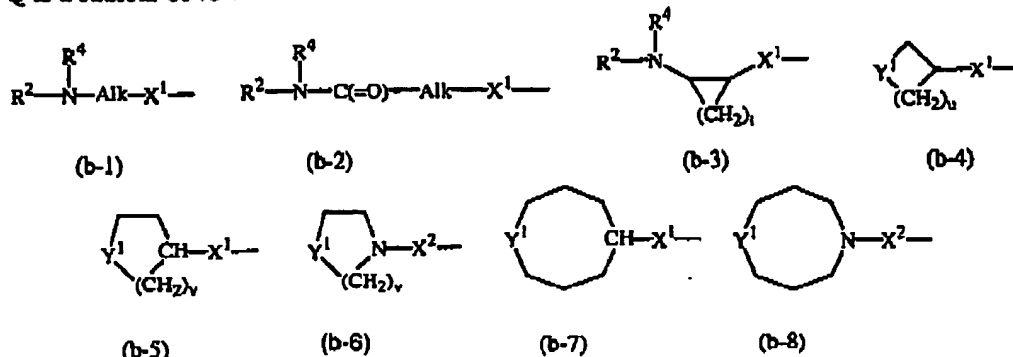
wherein each hydrogen atom in the radicals (a-1), (a-2), (a-3), (a-4) and (a-5) may optionally be replaced by halo,  $\text{C}_{1-6}$ alkyl, nitro, amino, hydroxy,  $\text{C}_{1-6}$ alkyloxy, polyhalo $\text{C}_{1-6}$ alkyl, carboxyl, amino $\text{C}_{1-6}$ alkyl, mono- or di( $\text{C}_{1-6}$ alkyl)-amino $\text{C}_{1-6}$ alkyl,  $\text{C}_{1-6}$ alkyloxycarbonyl, hydroxy $\text{C}_{1-6}$ alkyl, or a radical of

15



wherein  $=\text{Z}$  is  $=\text{O}$ ,  $=\text{CH}-\text{C}(=\text{O})-\text{NR}^{5a}\text{R}^{5b}$ ,  $=\text{CH}_2$ ,  $=\text{CH}-\text{C}_{1-6}\text{alkyl}$ ,  $=\text{N}-\text{OH}$  or  $=\text{N}-\text{O}-\text{C}_{1-6}\text{alkyl}$ ;

20 Q is a radical of formula

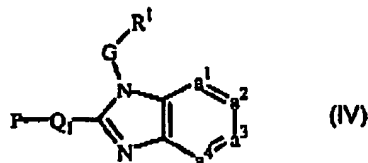
wherein Alk is  $\text{C}_{1-6}$ alkanediyl; $\text{Y}^1$  is a bivalent radical of formula  $-\text{NR}^2-$  or  $-\text{CH}(\text{NR}^2\text{R}^4)-$ ;

25  $\text{X}^1$  is  $\text{NR}^4$ , S,  $\text{S}(=\text{O})$ ,  $\text{S}(=\text{O})_2$ , O,  $\text{CH}_2$ ,  $\text{C}(=\text{O})$ ,  $\text{C}(=\text{CH}_2)$ ,  $\text{CH}(\text{OH})$ ,  $\text{CH}(\text{CH}_3)$ ,  $\text{CH}(\text{OCH}_3)$ ,  $\text{CH}(\text{SCH}_3)$ ,  $\text{CH}(\text{NR}^{5a}\text{R}^{5b})$ ,  $\text{CH}_2-\text{NR}^4$  or  $\text{NR}^4-\text{CH}_2$ ;

-63-

- 2-amine; [(A),(R)]-*N*-[1-(2-aminopropyl)-4-piperidinyl]-1-[ethoxy(6-methyl-2-pyridinyl)methyl]-1*H*-benzimidazol-2-amine monohydrate; (±)-*N*-[1-(2-aminoethyl)-4-piperidinyl]-1-[(6-bromo-2-pyridinyl)ethoxymethyl]-2-benzimidazol-2-amine; (±)-*N*-[1-(2-aminoethyl)-4-piperidinyl]-1-[(2-ethoxyethoxy)(6-methyl-2-pyridinyl)methyl]-1*H*-benzimidazol-2-amine; [(B),(S)] *N*-[1-(2-aminopropyl)-4-piperidinyl]-1-[ethoxy(6-methyl-2-pyridinyl)methyl]-1*H*-benzimidazol-2-amine monohydrate; (±)-*N*-[1-(2-amino-3-methylbutyl)-4-piperidinyl]-3-[(2-methoxyethoxy)(6-methyl-2-pyridinyl)methyl]-7-methyl-3*H*-imidazo[4,5-*b*]pyridin-2-amine; (±)-*N*-[1-(2-amino-3-methylbutyl)-4-piperidinyl]-1-[(2-ethoxyethoxy)(6-phenyl-2-pyridinyl)methyl]-1*H*-benzimidazol-2-amine; (±)-*N*-[1-(2-aminoethyl)-4-piperidinyl]-1-[(2-methoxyethoxy)(6-methyl-2-pyridinyl)methyl]-1*H*-benzimidazol-2-amine; (±)-*N*-[1-(2-amino-3-methylbutyl)-4-piperidinyl]-1-[(6-bromo-2-pyridinyl)ethoxymethyl]-4-methyl-1*H*-benzimidazol-2-amine monohydrate; [(A),(R)]-*N*-[1-(2-amino-3-methylbutyl)-4-piperidinyl]-1-[(6-bromo-2-pyridinyl)ethoxymethyl]-1*H*-benzimidazol-2-amine; (±)-*N*-[1-(2-amino-3-methylbutyl)-4-piperidinyl]-1-[(6-bromo-2-pyridinyl)ethoxymethyl]-1*H*-benzimidazol-2-amine;
- a *N*-oxide, addition salt, quaternary amine or stereochemically isomeric form thereof.

9. A compound as claimed in any one of claims 1 to 8 for use as a medicine.
10. A pharmaceutical composition comprising a pharmaceutically acceptable carrier, and as active ingredient a therapeutically effective amount of a compound as described in any one of claims 1 to 8.
11. A process of preparing a composition as claimed in claim 10, characterized in that a pharmaceutically acceptable carrier is intimately mixed with a therapeutically effective amount of a compound as described in any one of claims 1 to 8.
12. An intermediate of formula



with  $R^1$ , G and  $-a^1=a^2-a^3=a^4$  defined as in claim 1, P being a protective group, and  $Q_1$  being defined as Q according to claim 1 provided that it is devoided of the  $R^2$  or  $R^6$  substituent.